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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/686,772

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EXAMINER

FIDLER, SHELBY LEE

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/686,772

Applicant(s)

MITSUZAWA, TOYOHICO

Examiner

Shelby Fidler

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 March 2006.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 14 is/are allowed.  
6) ☒ Claim(s) 1-5, 7-13, 15, 16 is/are rejected.  
7) ☐ Claim(s) 6 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Yoshimura et al. (US 6439684 B1).

**Yoshimura et al. teach the following:**

**\*regarding claim 1, a printing apparatus comprising:**

a plurality of print heads (print heads 8a, 8b, . . . ., col. 13, lines 38-39 and Fig. 9);

a moving member that can be moved and that is provided with the plurality of print heads (col. 13, lines 39-41); and

a feeding mechanism for feeding a medium to be printed (feeding roller 2, Fig. 2);

wherein dots for correcting a feed amount by which the feed mechanism feeds the medium to be printed are formed on the medium to be printed (col. 13, lines 22-26) by ejecting ink from a predetermined print head (col. 13, lines 59-63 or col. 14, lines 13-14), among the plurality of print heads, while moving the moving member (col. 13, lines 63-67), and

wherein the predetermined print head is a print head other than the print head, among the plurality of print heads, that is most susceptible to vibration caused by

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moving the moving member (since this limitation lacks any structural recitation, it has not been given patentable weight)

**\*regarding claim 2**, the predetermined print head (e.g. recording head 8a) is the printhead, among the plurality of print heads, that is the least susceptible to the vibration caused by moving the moving member (since this limitation lacks any structural recitation, it has not been given patentable weight)

**\*regarding claim 5**, the dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed are formed on the medium to be printed by ejecting ink from predetermined nozzles provided in the predetermined print head (col. 13, lines 61-63)

**\*regarding claim 9**, the dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed are formed on the medium to be printed during a printing operation of the printing apparatus (col. 13, lines 61-67)

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al. (US 6439684 B1) in view of Kuboki (US 4975780).

**Yoshimura et al. teach the following:**

**\*regarding claim 3**, a drive member that is connected to the moving member and that is for driving the moving member (col. 3, lines 44-47)

**\*regarding claim 4**, the dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed are formed on both edge sections of the medium to be printed (e.g. Fig. 3) by ejecting ink from the predetermined print head

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(col. 13, lines 59-63 or col. 14, lines 13-14), among the plurality of print heads, while moving the moving member (col. 13, lines 61-67)

**Yoshimura et al. do not expressly teach the following:**

\*regarding claim 3, the predetermined print head (e.g. recording head 56c) is the print head that is located the closest to a connecting section at which the moving member (scanning carriage 58) and the drive member (scanning motor 62) are connected to each other (Fig. 3)

At the time of invention, it would have been obvious to a person of ordinary skill in the art to utilize Kuboki's scanning carriage and scanning motor orientation. The motivation for doing so, as taught by Kuboki, is to perform main scanning (col. 5, lines 21-25).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura in view of Takemura et al. (US 5988784).

**Yoshimura teaches the following:**

\*regarding claim 7, dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed (col. 13, lines 22-26)

**Yoshimura teaches all claimed limitations except for the following:**

\*regarding claim 7, whether or not to form dots for correcting the feed amount is determined according at least one of a value of a temperature around the printing apparatus and a value of a humidity around the printing apparatus

**Takemura et al. teach the following:**

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**\*regarding claim 7**, whether or not to form, on the medium to be printed, the dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed is determined according at least one of

a value of a temperature around the printing apparatus and a value of a humidity around the printing apparatus (col. 15, lines 25-37)

At the time of invention, it would have been obvious to a person of ordinary skill in the art to print dots for correcting the feed amount according to a value of a temperature around the apparatus in Yoshimura's invention. The motivation for doing so, as taught by Takemura et al., is that a change in speed of conveyance occurs with environmental conditions (col. 17, lines 1-13).

Claims 10, 11, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al. (US 6439684 B1), as applied to claim 1 above, and further in view of Kojima (US 6905186 B2).

**Yoshimura et al. teach all claimed limitations except for the following**

**\*regarding claim 10**, the dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed are formed on the medium to be printed when the medium to be printed has been exchanged

**\*regarding claims 11 and 15**, a detector for detecting whether or not the medium to be printed has been exchanged;

wherein when it has been detected by the detector that the medium to be printed has been exchanged, the dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed are formed on the medium to be printed

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**Kojima teaches the following:**

\*regarding claim 10, the dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed are formed on the medium to be printed when the medium to be printed has been exchanged (col. 10, lines 7-13)

\*regarding claims 11 and 15, a detector for detecting whether or not the medium to be printed has been exchanged (col. 10, lines 7-9);

wherein when it has been detected by the detector that the medium to be printed has been exchanged, the dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed are formed on the medium to be printed (col. 10, lines 1-13)

At the time of invention, it would have been obvious to a person of ordinary skill in the art to form dots for correcting the feed amount when the medium has been exchanged in Yoshimura et al.'s invention. The motivation for doing so, as taught by Kojima, is that the feeding distance or feeding speed deviates when the paper changes because the friction between the paper and the rollers change (col. 1, lines 39-49).

Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al. (US 6439684 B1) in view of Yamasaki et al. (US 6769759 B2).

**Yoshimura et al. teach all claimed limitations except the following:**

\*regarding claim 12, the dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed are formed on the medium to be printed when a print mode of the printing apparatus has been changed

\*regarding claim 16, a plurality of print heads (col. 13, lines 37-38)

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**Yamasaki et al. teach the following:**

\*regarding claim 12, the dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed are formed on the medium to be printed when a print mode of the printing apparatus has been changed (col. 4, lines 63-66)

\*regarding claim 16, each of the plurality of print heads has a black nozzle row, a cyan nozzle row, a magenta nozzle row, and a yellow nozzle row (Fig. 5)

At the time of invention, it would have been obvious to a person of ordinary skill in the art to print dots for correcting the feed amount when a print mode has changed. The motivation for doing so, as taught by Yamasaki et al., is to improve the image quality for each print mode (col. 2, lines 17-22).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshimura et al. (US 6439684 B1) in view of Izumi et al. (US 6568784 B2).

**Yoshimura et al. teach all claimed limitations except for the following:**

\*regarding claim 13, at least two correction amounts for correcting the feed amount by which the feed mechanism feeds the medium to be printed are obtained based on the dots formed on the medium to be printed, and

wherein, based on an average value of the correction amounts that are obtained, the feed amount by which the feed mechanism feeds the medium to be printed is corrected

**Izumi et al. teach the following:**



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\*regarding claim 13, at least two correction amounts for correcting the feed amount by which the feed mechanism feeds the medium to be printed are obtained based on the dots formed on the medium to be printed (col. 2, line 66 - col. 3, line 3), and wherein, based on an average value of the correction amounts that are obtained, the feed amount by which the feed mechanism feeds the medium to be printed is corrected (col. 3, lines 3-9)

At the time of invention, it would have been obvious to a person of ordinary skill in the art to correct printing based on an average value of the correction amounts obtained in Yoshimura et al.'s invention. The motivation for doing so, as taught by Izumi et al., is to effectively determine sheet convey amount error (col. 2, lines 28-32).

*Allowable Subject Matter*

Claim 14 is allowed.

The primary reason for the allowance of claim 14 is the inclusion of the limitation of a printing apparatus including a detector for detecting a force by which a suction member sucks the medium to be printed; wherein whether or not to form, on the medium to be printed, the dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed is determined according an output value of the first detector. It is this limitation found in the claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.

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Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The primary reason for the indication of allowable subject matter of claim 6 is the inclusion of the limitation of a printing apparatus including a first detector for detecting a force by which a suction member sucks the medium to be printed; wherein whether or not to form, on the medium to be printed, the dots for correcting the feed amount by which the feed mechanism feeds the medium to be printed is determined according an output value of the first detector. It is this limitation found in the claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.

#### *Response to Arguments*

Applicant's arguments filed 3/14/2006 have been fully considered but they are not persuasive.

Regarding claim 1, it is argued that Yoshimura et al. (US 6439684 B1) fails to teach printing dots by "a predetermined print head" among a plurality of print heads. However, in col. 13, lines 61-63, Yoshimura teaches test pattern P1 is recorded by recording head 8a only; therefore, recording head 8a was predetermined to record pattern P1. Similarly, in col. 14, lines 13-14, the second test pattern P2 is recorded by recording head 8b only; therefore, recording head 8b was predetermined to record pattern P2.

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Applicant's arguments with respect to claims 1- have been considered but are moot in view of the new ground(s) of rejection. See above rejection, Yoshimura et al. (US 6439684 B1).

*Communication with the USPTO*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shelby Fidler whose telephone number is (571) 272-8455. The examiner can normally be reached on MWF 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vip Patel can be reached on (571) 272-2458. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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